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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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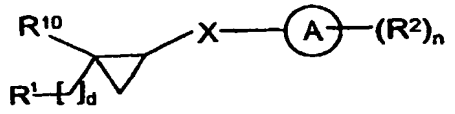
(54) Title: CYCLOPROPYL COMPOUNDS AS CCR5 ANTAGONISTS



(I)

(57) Abstract: The present invention relates to compounds of formula (I), or pharmaceutically acceptable derivatives thereof, useful in the treatment of CCR5-related diseases and disorders, for example, useful in the inhibition of HIV replication, the prevention or treatment of an HIV infection, and in the treatment of the resulting acquired immune deficiency syndrome (AIDS).

INTERNATIONAL SEARCH REPORT

International Application No
[redacted]T/US 03/39619

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07D471/10 C07D471/08 C07D413/04 C07D401/04 C07D211/58
C07D211/10 A61K31/438 A61K31/439 A61K31/443 A61K31/4439
A61K31/4409

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07D A61P A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, BIOSIS, CHEM ABS Data, WPI Data, PAJ, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FINKE P E ET AL: "Antagonists of the human CCR5 receptor as anti-HIV-1 agents. Part 2: structure-activity relationships for substituted 2-aryl-1-'N-(methyl)-N-(phenylsulfonyl)amino!-4-(piperidin-1-yl)butanes" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 11, no. 2, January 2001 (2001-01), pages 265-270, XP004314863 ISSN: 0960-894X table 2 ----- -/--	1-38

[X] Further documents are listed in the continuation of box C.

[ ] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 November 2004	17/11/2004

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Stroeter, T

Form PCT/ISA/210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International Application No
[redacted]S 03/39619

C.(Continuation) DOCUMENTS CONSIDE[redacted]TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FINKE PAUL E ET AL: "Antagonists of the human CCR5 receptor as anti-HIV-1 agents. Part 3: a proposed pharmacophore model for 1-(N-(methyl)-N-(phenylsulfonyl)amin o)-2-(phenyl)-4-(4-(substituted)piperidin-1-yl)butanes" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 11, no. 18, 2001, pages 2469-2473, XP002962948 ISSN: 0960-894X figure 2; table 2	1-38
A	DORN C P ET AL: "Antagonists of the human CCR5 receptor as anti-HIV-1 agents. Part 1: Discovery and initial structure-activity relationships for 1-amino-2-phenyl-4-(piperidin-1-yl)butanes " BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 11, no. 2, January 2001 (2001-01), pages 259-264, XP004314862 ISSN: 0960-894X the whole document	1-38
P,A	MAEDA K ET AL: "The current status of, and challenges in, the development of CCR5 inhibitors as therapeutics for HIV-1 infection" CURRENT OPINION IN PHARMACOLOGY, ELSEVIER SCIENCE PUBLISHERS,, NL, vol. 4, no. 5, October 2004 (2004-10), pages 447-452, XP004558853 ISSN: 1471-4892 compounds CMPD167, VK427857	1-38
P,A	KUMAR S ET AL: "PHARMACOKINETICS AND INTERACTIONS OF A NOVEL ANTAGONIST OF CHEMOKINE RECEPTOR 5 (CCR5) WITH RITONAVIR IN RATS AND MONKEYS: ROLE OF CYP3A AND P-GLYCOPROTEIN" JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, AMERICAN SOCIETY FOR PHARMACOLOGY AND, US, vol. 304, no. 3, 1 March 2003 (2003-03-01), pages 1161-1171, XP009019167 ISSN: 0022-3565 compounds MRK-1	1-38

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claims 22-27 and 36-38 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.2

Claims Nos.: 1-21 (in part)

The present claims 1-21 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds claimed claim 1 having the definitions for R10 and A as given in dependent claims 3 and 15, respectively.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/39619

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 22-27 and 36-38 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

2. [X] Claims Nos.: 1-21 (in part)
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. [ ] As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.